

## **SCA 4.0 Approved**

The Joint Tactical Radio System (JTRS), with participation from the Wireless Innovation Forum (WinnF), has approved the next generation Software Communications Architecture as SCA 4.0. The first SCA release was in 1999 and since that time several generations of software defined radios have been powered and enabled by this ‘operating system for radios’.

SCA 4.0 is a bold update, introducing new technology that tailors the operating system size specifically for the radio and its mission. Memory and processing overhead can be reduced to negligible levels. Architectural enhancements improve security while enabling much faster boot-up times and reconfiguration of the radio.

Commercial operating systems for radios and handhelds such as Android are feature-laden with presentation graphics and user interfaces. However, they do not enable new waveforms to be installed upon the radio – when 5G is introduced, the handsets must be replaced. Government and military radios have much longer lifetimes than the 2 years of today’s commercial products. SCA 4.0 is specifically designed for the reprogrammability of the radio frequency (RF) and signal processing components of the radio. A radio can be installed in an airplane or vehicle with the knowledge it can be upgraded with a software download.

SCA 4.0 introduces extensions for binding to presentation layers such as Android, allowing the radio users access to the many applications created in the commercial market. The power and flexibility in the SCA is to enable the reprogrammability of the RF and computational resources of the radio, and because it is open architecture, it permits a waveform written for one radio to be ported readily to another radio.

This capability allows governments and organizations to develop a waveform once, and then reuse the waveform on multiple radios, with the assurance of interoperability with other radios. SCA 4.0 continues this feature of portability of waveforms and interoperability. The JTRS program has developed advanced Mobile Ad-Hoc Network (MANET) and legacy waveforms which are portable and being installed upon many different radio platforms. This is possible because of the SCA and its companion JTRS Application Program Interfaces.

The new 4.0 standard was developed with international participation and approved by the JTRS standards body consisting of DoD programs, industry representatives, and the WinnF, representing the at-large software defined radio community. The draft version of SCA 4.0, and other public JTRS standards are available at <http://www.public.navy.mil/jpeojtrs/sca>.